Abstract: The present invention relates to a continuous process for the manufacture of triethanolamine (TEA) comprising, in succession: (i) a step of synthesizing the TEA by continuously bringing ammonia into contact with ethylene oxide under conditions allowing the formation of a reaction mixture comprising mono-, di- and triethanolamines, (ii) a step of continuously separating the ammonia that has not reacted from the reaction mixture and (iii) a step of continuously separating the TEA from the mixture resulting from step (ii). The process is characterized in that a specific mixture of alkanolamines, comprising TEA and from 0,5 to 50 % by weight of at least one secondary dialkanolamine, is prepared or isolated from the mixture resulting from step (ii), and in that the TEA is separated and isolated with a degree of purity equal to or greater than 99.2 % by weight, by a continuous distillation of the specific mixture of alkanolamines. The present invention also relates to a colourless TEA having a high purity, that can be obtained by the process according to the invention and especially has a high resistance to coloration.